

REMARKS

Reconsideration of the application is requested in view of the above amendments and the following remarks. Claims 15, 16 and 22 have been amended. Support for the amendments to claims 15, 16 and 22 can be found in at least Figures 3 and 4 and at page 9, lines 33-37 of the present application. Changes made to the claims by the current amendment are shown in the attached "Version with Markings to Show Changes Made."

Claims 10, 11 and 16 were rejected under 35 U.S.C. § 102(e) as being anticipated by Bar-Gadda, U.S. 5,468,075. Applicants respectfully traverse this rejection.

Bar-Gadda fails to disclose the pattern of recessed portions and the master information carrier required by claim 16. The master information carrier required by claim 16 includes "a pattern of recessed portions, the pattern being disposed in the track length direction so as to correspond to an arrangement of the information signals." The pattern is an actual limitation in the structure of the master information carrier and correlates to the arrangement of information signals. In contrast, the magnetic recording medium disclosed by Bar-Gadda has an embossed pattern filled with a ferromagnetic material, and the pattern has a uniform arrangement of recessed portions that does not relate to information signals. One skilled in the art would not use a uniform pattern to represent information signals. Therefore, there is a structural difference between the master information carrier required by claim 16 and the magnetic recording medium disclosed by Bar-Gadda.

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Further to the above, the magnetic recording medium disclosed by Bar-Gadda is different from the master information carrier required by claim 16. In order to record information signals on a "magnetic recording medium" using a master information carrier, the pattern on the master information carrier is magnetically transferred to the magnetic recording medium so as to be recorded as magnetization signals. The magnetic recording medium disclosed by Bar-Gadda must be recorded magnetically with a magnetic head on the uniformly arranged pattern of the magnetic material, rather using a master information carrier. Thus, Applicants submit that Bar-Gadda fails to disclose a master information carrier or a magnetic recording medium that is compatible with a master information carrier. Therefore, Bar-Gadda fails to disclose every limitation of claim 16, and the claims that depend from it.

Claims 10, 16, 20 and 22 were rejected under 35 U.S.C. § 102(e) as being anticipated by Ishida et al., U.S. 6,347,016. Applicants respectfully traverse this rejection.

Ishida fails to disclose "top surfaces of the non-magnetic substrate and the ferromagnetic films forming a substantially flat surface," as required by claims 16 and 22. Ishida discloses in Figure 4 a ferromagnetic film that is disposed on the nonmagnetic substrate at a region between the embossed pattern. As a result, a pattern of the ferromagnetic films protrudes from the other portions of the ferromagnetic film, which may make the magnetic recording medium weak during repetitive recording. Thus, the master information carrier disclosed by Ishida not only fails to disclose the limitations of claims 16 and 22, but also provides a structure that lacks sufficient durability for the repetition of recording steps involving pressure contact with a magnetic recording medium, whereas the present invention is intended to address durability of the master information carrier.

Further to the above, Applicants submit that Figure 12C of Ishida fails to disclose the limitations of claim 22 because Figure 12C fails to show a final product. Figure 12C shows one step in the process of forming a pattern of the ferromagnetic film from a ferromagnetic film 122 and a photoresist film 123. The photoresist film 123 is removed from the final product as shown in Figure 12D. Therefore, Applicants submit that Ishida further fails to disclose every limitation of claims 22.

Claim 12 was rejected under 35 U.S.C. § 102(e) as anticipated by, or in the alternative, under 35 U.S.C. § 103(a) as being obvious over Bar-Gadda. As discussed above, Bar-Gadda fails to disclose every limitation of claim 16, from which claim 12 depends. Applicants further submit that Bar-Gadda fails to suggest or render obvious every limitation of claim 16. Therefore, Applicants submit that claim 12 is allowable for at least the reason it is dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bar-Gadda. Applicants respectfully traverse this rejection. As discussed above, Bar-Gadda fails to disclose or suggest ever limitation of claim 16. Therefore, Applicants submit that claim 21 is allowable for at least the reason it is dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

Claims 6, 7, 15, 17 and 22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Xuan et al., U.S. 6,214,434 in view of Yamamoto et al., IEEE Trans. Magn., Vol. 33, No. 5, Sept. 1997, pp. 3016-3018. Applicants respectfully traverse this rejection.

Yamamoto and Xuan are directed to a magnetic recording medium in which a pattern of a ferromagnetic film has a uniform arrangement. As discussed above with regard to the Bar-Gadda reference, a magnetic recording medium having a ferromagnetic film with a uniform arrangement of recessed portions is structurally distinct from the master information carrier of claims 15 and 22 that require a pattern disposed in the ferromagnetic film so as to correspond to an arrangement of the information signals. Specifically, one skilled in the art would not use a uniform arrangement of recessed portions filled with ferromagnetic material to represent information signals.

Further, the master information carrier of claims 15 and 22 requires a specified combination of materials for the ferromagnetic film and the nonmagnetic solid material that are neither disclosed nor suggested by Yamamoto and Xuan, particularly in light of the difference between the function of the master information carrier and the magnetic recording medium as mentioned above. In order to obtain optimum performance in transfer recording, the material for the ferromagnetic film is required to have a saturation magnetic flux density so as to generate a sufficiently large magnetic field as compared to a coercive force of the magnetic recording medium. The combination of materials required by claims 15 and 22 satisfy these requirements for the ferromagnetic film. The material for the nonmagnetic solid material is required to have a low solid-solubility with the material of the ferromagnetic film. If the materials of the nonmagnetic solid material have a solid solubility with the material of the ferromagnetic film, the magnetic property of the ferromagnetic film will deteriorate due to diffusion at the interface between the ferromagnetic material and the nonmagnetic solid material. This type of deterioration may degrade the sharpness of the magnetic field generated by the master information carrier. The nonmagnetic solid material required by claims 15 and 22 is suitable for use in combination with the materials of the ferromagnetic film so that deterioration of the ferromagnetic film is avoided.

Yamamoto and Xuan fail to disclose or suggest these specific materials or the advantages provided by the material combinations required by claims 15 and 28. Therefore, withdrawal of the rejection is respectfully requested.

Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Xuan et al. in view of Yamamoto et al., and further in view of Aine, Re. 32,464. Applicants respectfully traverse this rejection.

As discussed above, Xuan and Yamamoto fail to disclose or suggest every limitation of claim 15. Aine fails to remedy the deficiencies of Xuan and Yamamoto as they relate to claim 15. Therefore, claim 18 is allowable for at least the reason it is dependent upon an allowable base claim. Applicants do not concede the correctness of this rejection.

In view of the above, Applicants request reconsideration of the application in the form of a Notice of Allowance.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Claims 15, 16 and 22 have been amended as follows:

15. (Twice Amended) A master information carrier used for recording information signals on a magnetic recording medium, comprising a non-magnetic substrate; a pattern of a ferromagnetic film which is disposed on the surface of the non-magnetic substrate, the pattern being disposed in the track length direction so as to correspond to an arrangement of the information signals; and a non-magnetic solid material filled in portions between respective neighboring ferromagnetic film areas composing the pattern, top surfaces of the ferromagnetic films and the non-magnetic solid material forming a substantially flat surface,

wherein the ferromagnetic film comprises a material selected from the group consisting of Co, Fe, and an alloy comprising Co or Fe as the main component, and the non-magnetic solid material is selected from the group consisting of SiO₂, Al₂O₃, Cu, Ag and an alloy comprising Cu or Ag as the main component.

16. (Twice Amended) A master information carrier used for recording information signals on a magnetic recording medium, comprising a non-magnetic substrate having an embossed surface that forms a pattern of recessed portions, the pattern being disposed in the track length direction so as to [corresponding] correspond to an arrangement of the information signals; and a ferromagnetic film filled in the recessed portions of the pattern, top surfaces of the non-magnetic substrate and the ferromagnetic films forming a substantially flat surface,

wherein the ferromagnetic film comprises a material selected from the group consisting of Co, Fe, and an alloy comprising Co or Fe as the main component and the non-magnetic substrate comprises a material selected from the group consisting of SiO₂, Al₂O₃, Si, and C.

22. (Once Amended) A master information carrier used for recording information signals on a magnetic recording medium, comprising a non-magnetic substrate; a pattern of ferromagnetic film which is disposed on the surface of the non-magnetic substrate, the pattern being disposed in the track length direction so as to correspond to an arrangement of the information signals; and a non-magnetic solid materials filled in portions between the respective

neighboring ferromagnetic films areas composing the pattern, top surfaces of the ferromagnetic films and the non-magnetic solid material forming a substantially flat surface

wherein the ferromagnetic film comprises a material selected from the group consisting of Co, Fe, and an alloy comprising Co or Fe as the main component, and the non-magnetic solid material comprises a polymer material.